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DOUGLAS-FIR TUSSOCK MOTH[1] MONITORING IN SOUTHERN IDAHO DURING 1981

By

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INTRODUCTION

Douglas-fir tussock moth populations are characterized by rapid population increases and resultant tree defoliation. Since the moth can attain damaging levels in one or two years, both early detection and evaluation systems have been developed (Daterman et al. 1977, Mason 1979). Early detection is accomplished using pheromone baited traps which attract and entrap male tussock moths. The number of moths caught in these traps are indicative of population levels. Early larval evaluation techniques are also employed prior to the onset of visible defoliation.

In southern Idaho, early detection has been conducted on a limited basis for several years in areas historically harboring tussock moth populations. In 1980, pheromone baited traps placed in the Owyhee Mountains indicated moth populations may be approaching the outbreak stage. To evaluate this situation, a larval assessment was conducted at one site in 1981. This report contains the results of the larval assessment and an expanded early detection effort conducted in southern Idaho in 1981.

METHODS

Pheromone baited traps placed around Dewey Peak in the Owyhee Mountains in the fall of 1980 indicated tussock moth populations were reaching outbreak levels. To follow population development, in the spring of 1981,

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I evaluated the larval population at three sites around Dewey Peak. Mason's (1979) midcrown sequential sampling technique was employed.

The early detection survey conducted in southern Idaho was expanded in 1981. The survey employed established procedures (Daterman et al. 1977). Ten survey locations (Figure 1) were chosen from areas which had either experienced past tussock moth defoliation or from areas where tussock moth was recovered during previous trap surveys (Ollieu 1978).

Five traps, baited with a 0.001 percent synthesized Douglas-fir tussock moth sex attractant, were placed at each sample location between August 18 and 20, 1981, and retrieved between October 27 and November 4, 1981. This time frame coincides with the flight period of the male tussock moth. Upon recovery, captured moths were identified and the average number of moths per trap computed.

RESULTS

Larval evaluations at Dewey Peak revealed averages of 3.3, 5.1, and 8.3 larvae for every 1,000 square inches of foliage. Using Mason's (1979) defoliation prediction system, these populations are categorized as light and predictive of little noticeable defoliation. The categorization was accurate since no defoliation was visible when I returned in the fall to distribute pheromone baited traps.

Male Douglas-fir tussock moths were trapped at nine of the ten detection survey locations (Table 1). An average recovery of 25 or more moths per trap at a site indicates that a local population may cause visible defoliation within the next two summers (Daterman et al. 1977). Only those survey sites in the Owyhee Mountains--Dewey Peak, Mill Creek, and Boone Peak--approached or met these levels.

DISCUSSION AND RECOMMENDATIONS

Results from pheromone baited traps in 1980 and 1981 indicate that tussock moth populations are increasing in the Owyhee Mountains. Although no defoliation occurred at the evaluation sites, a total of approximately 160 acres of lightly to moderately defoliated Douglas-firs was noted within three to four miles of the Dewey Peak location (Boise Field Office 1981). Given these conditions, defoliation will probably become more extensive and intensify in the near future throughout Douglas-fir stands in the Owyhee Mountains.

Since pheromone baited traps did not indicate building populations outside the Owyhee Mountains, tussock moth populations detected at other locations will not cause noticeable defoliation in 1982.

In 1982, I recommend that larval populations be evaluated in the Owyhee Mountains, aerial surveys be continued to identify defoliation, and early detection pheromone baited traps again be deployed as in 1981. Monitoring the tussock moth populations is needed to address the interests by land managers and research scientists. Presently, suppression efforts are unwarranted.

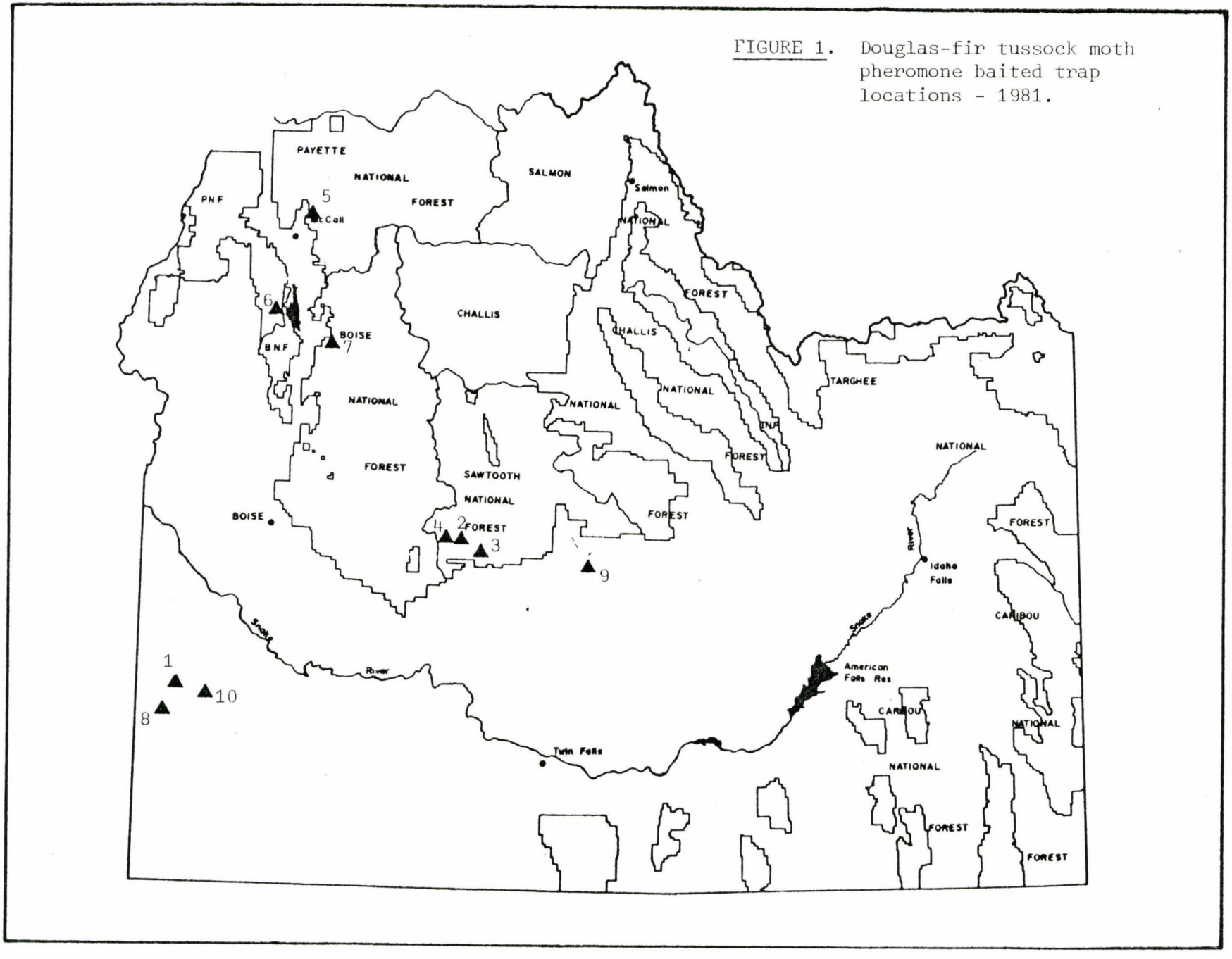

FIGURE 1. Douglas-fir tussock moth pheromone baited trap locations - 1981.

TABLE 1. Summary of male Douglas-fir tussock moths caught in pheromone baited traps distributed in southern Idaho - 1981.

Forest Map locator	Area (county)	Location Rge.	Twp.	Sec.	Mean Number of Male Douglas-fir Tussock Moths/Trap by Year 1980	1981
BLM						
1[1/]	Dewey Peak (Owyhee)	4W	6S	3	55	64
Sawtooth NF						
2	Little Water Gulch (Elmore)	12E	3N	7	--[2/]	3.8
3	Couch Summit (Camas)	14E	2N	9	--	0.4
4	Virginia Gulch (Elmore)	11E	3N	9	--	0.6
Payette NF						
5	Brown's Pond (Valley)	4E	18N	3	--	0
Boise NF						
6	Anderson Creek Divide (Adams)	2E	14N	14	--	1.2
7	Skunk Creek (Valley)	4E	12N	14	--	0.2
Idaho State Lands						
8	Mill Creek (Owyhee)	5W	8S	12	0.6	47.6
9	Sharps Canyon (Blaine)	19E	2N	36	--	19.4
Private Lands						
10	Boone Peak (Owyhee)	3W	6S	2	--	23

1/ map locator relative to Figure 1.

2/ not sampled.

LITERATURE CITED

Boise Field Office, Forest Pest Management. 1981. 1981 Insect and disease conditions in forests of southern Idaho. USDA For. Serv., Int. Region, Ogden, Utah. 10 pp.

Daterman, G. E., R. L. Livingston, J. M. Wenz, and L. L. Sower. 1977. How to use pheromone traps to determine outbreak potential. USDA, Agric. Handbook 546. 11 pp.

Mason, R. R. 1979. How to sample Douglas-fir tussock moth larvae. USDA, Agric. Handbook 547. 15 pp.

Ollieu, M. 1978. Detection of Douglas-fir tussock moth in the Intermountain Region using baited sticky traps. USDA For. Serv., Int. Region, Ogden, Utah. 7 pp.